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Justin Lyle* (justin.lyle@ku.edu) and **Jonathan Montaño**. *Extremal growth of Betti numbers and rigidity of (co)homology.*

Let (R, \mathfrak{m}, k) be a Cohen-Macaulay local ring and let M, N be finitely generated R -modules. We consider the vanishing of $\mathrm{Tor}_i^R(M, N)$ or $\mathrm{Ext}_R^i(M, N)$ for $i \gg 0$. In particular, we establish obstructions to this vanishing using various numerics of M, N , and R . Our methods allow us to settle the Auslander-Reiten conjecture in several new cases, as well as establish new cases of a dual version of the Auslander-Reiten conjecture introduced by Şega. (Received January 20, 2020)